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29 Aug 60

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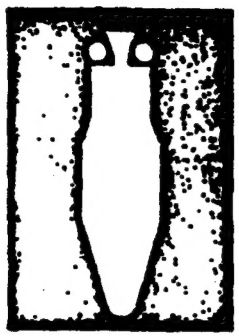

SAMOS

A NATIONAL SATELLITE RECONNAISSANCE SYSTEM

PHOTOGRAPHIC
ELECTRONIC

REQMTS PROVIDED BY
UNITED STATES INTELLIGENCE BOARD
-SATELLITE INTELLIGENCE REQMTS COMMITTEE

DEVELOPMENT AGENCY
UNITED STATES AIR FORCE

SECRET

DS 60-2887-A1

INTELLIGENCE REQUIREMENTS FOR SAMOS

[redacted] PRIORITY II

PHOTOGRAPHIC - LOCATION OF OPERATIONAL ICBM SITES

[redacted] PRIORITY III

A *PHOTOGRAPHIC* - DESCRIPTIVE INFORMATION ON HIGH PRIORITY TARGET LIST ITEMS

[redacted]

[redacted] PRIORITY III

A *PHOTOGRAPHIC* - TECHNICAL CHARACTERISTICS OF HIGH PRIORITY LIST ITEMS

[redacted]

[redacted] PRIORITY IV

[redacted]

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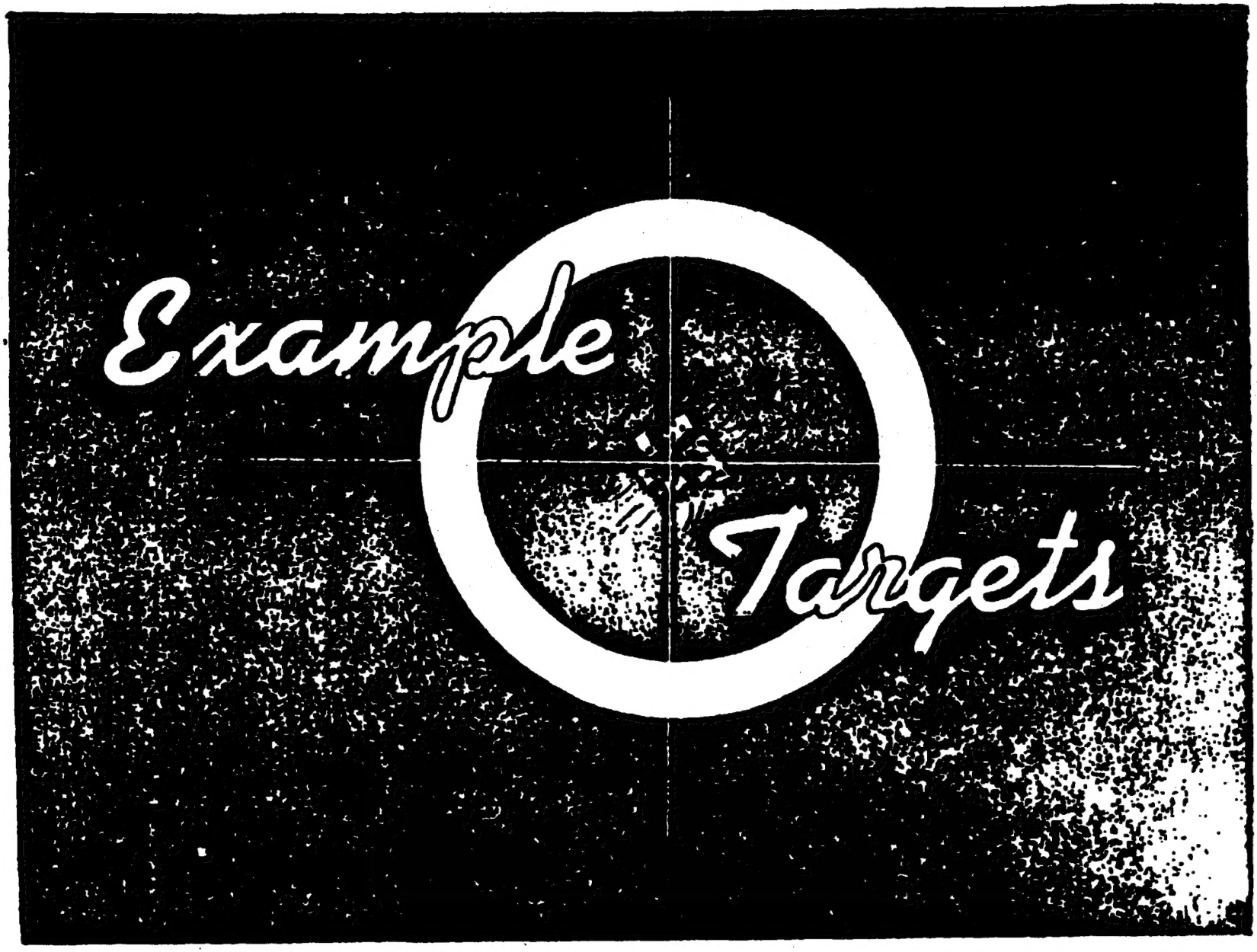
Example
Targets

EXAMPLE OF TARGET THAT MAY BE IDENTIFIED AT DIFFERENT GROUND RESOLUTION

100 ft — CITIES, FORESTS, RAIL ALIGNMENT, INDUSTRIAL COMPLEXES, MAJOR MILITARY INSTALLATIONS, AND LARGE BODIES OF WATER.

20 ft — *COMPONENTS OF MILITARY INSTALLATIONS, AIRBASE RUNWAYS, SUBMARINE BASES, MAJOR SURFACE TO AIR MISSILE SITES, ATOMIC ENERGY INSTALLATIONS, BALLISTIC MISSILE SITES, SURFACED SUBMARINES, LARGE AIRCRAFT AND MISSILE LAUNCHING PADS, IDENTIFICATION OF MAJOR SOVIET NAVAL FORCES.*

10 ft — *LARGE AIRCRAFT AND KNOWN MISSILE CARRYING SUBMARINES, LOCATING SPECIAL WEAPONS, ABOVE GROUND ICBM AND IRBM FACILITIES, CAPACITY OF MILITARY STORAGE FACILITIES, IDENTIFICATION OF NAVAL SHIPS BY TYPES.*

5 ft — *DETAILED INFORMATION ON MOST MILITARY AND INDUSTRIAL INSTALLATIONS, ALL AIRCRAFT, GROUND FORCES EQUIPMENT AND DISPOSITION, LARGE MISSILES, AAA SITES, STRUCTURAL SHIPBOARD CONFIGURATIONS, LEVELS OF MILITARY ACTIVITY.*

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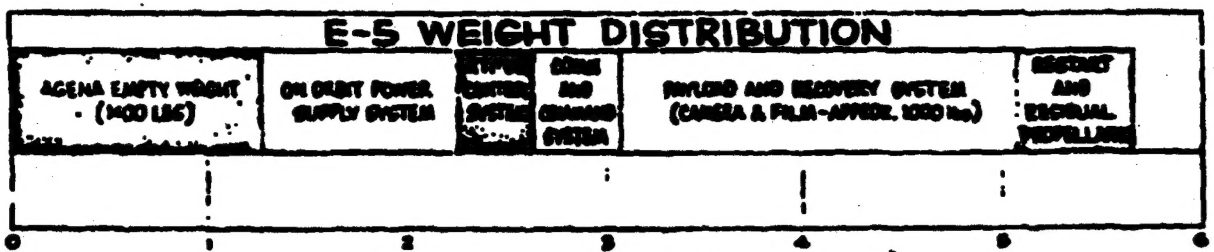
ORBITAL CAPABILITY

VEHICLE	WEIGHT ON ORBIT	
	AT 150 N. MILES ALTITUDE:	AT 261 N. MILES ALTITUDE:
THOR & AGENA B	2800 LBS	2600 LBS
ATLAS & AGENA B	6500 LBS	6200 LBS

SYSTEM	WEIGHT ON ORBIT	
	AT 150 N. MILES ALTITUDE:	AT 261 N. MILES ALTITUDE:
E-5	5700 LBS	
E-1 / F-1		4300 LBS
F-2		4100 LBS
F-3		4400 LBS
E-2		4900 LBS



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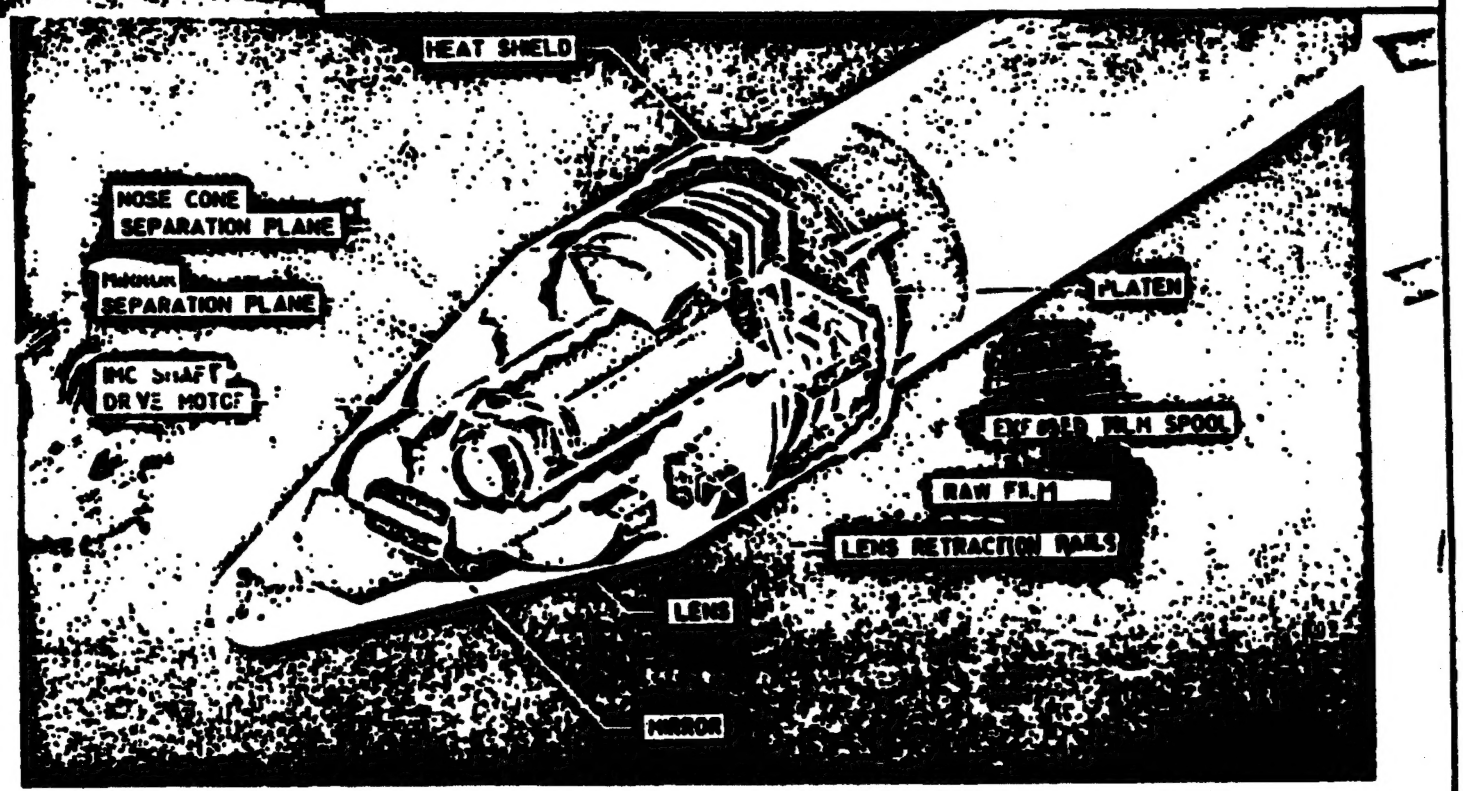
SAMOS RECOVERY E5 CAMERA PAYLOAD

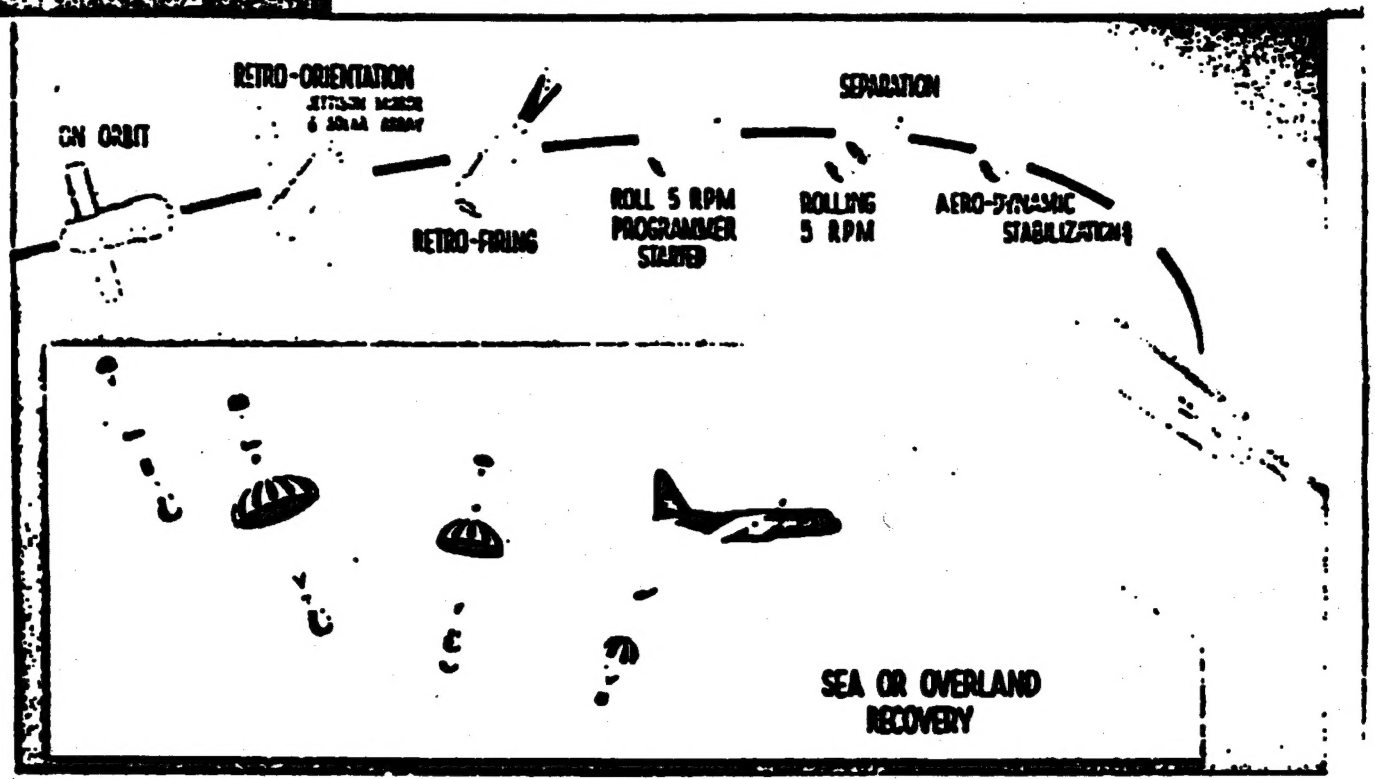


P 2219 SET 8/15/60
LMSD/364073 CY E-1

SECRET

SECRET

SAMOS E5 RECOVERY SEQUENCE



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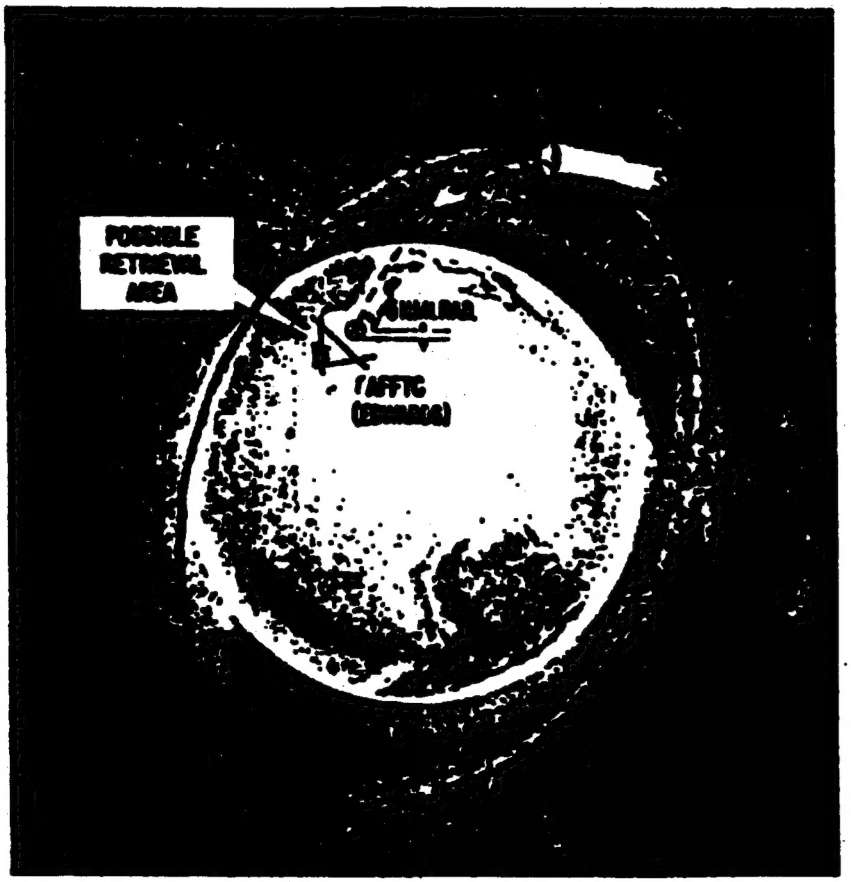
SAMOS E-6 — A NEW APPROACH



- RELIABILITY (SHORT LIFE)
- LARGE AREA COVERAGE
- HIGH RESOLUTION
- EARLY CAPABILITY
- PRECISE OVERLAND RETRIEVAL
- BROADENED CONTRACTOR BASE
- COMPATIBLE WITH DATA PROCESSING EQUIPMENT
- UTILIZE EXISTING GROUND FACILITIES

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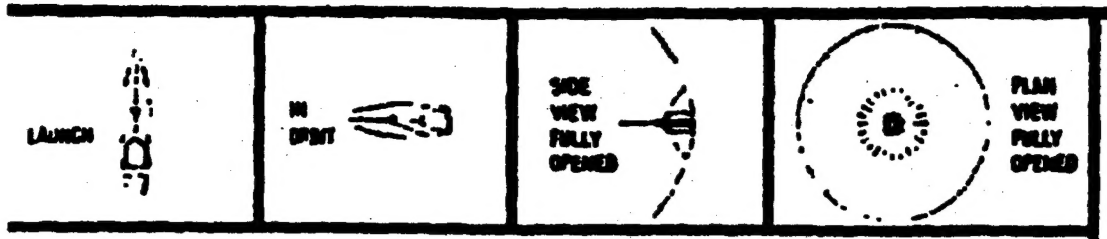
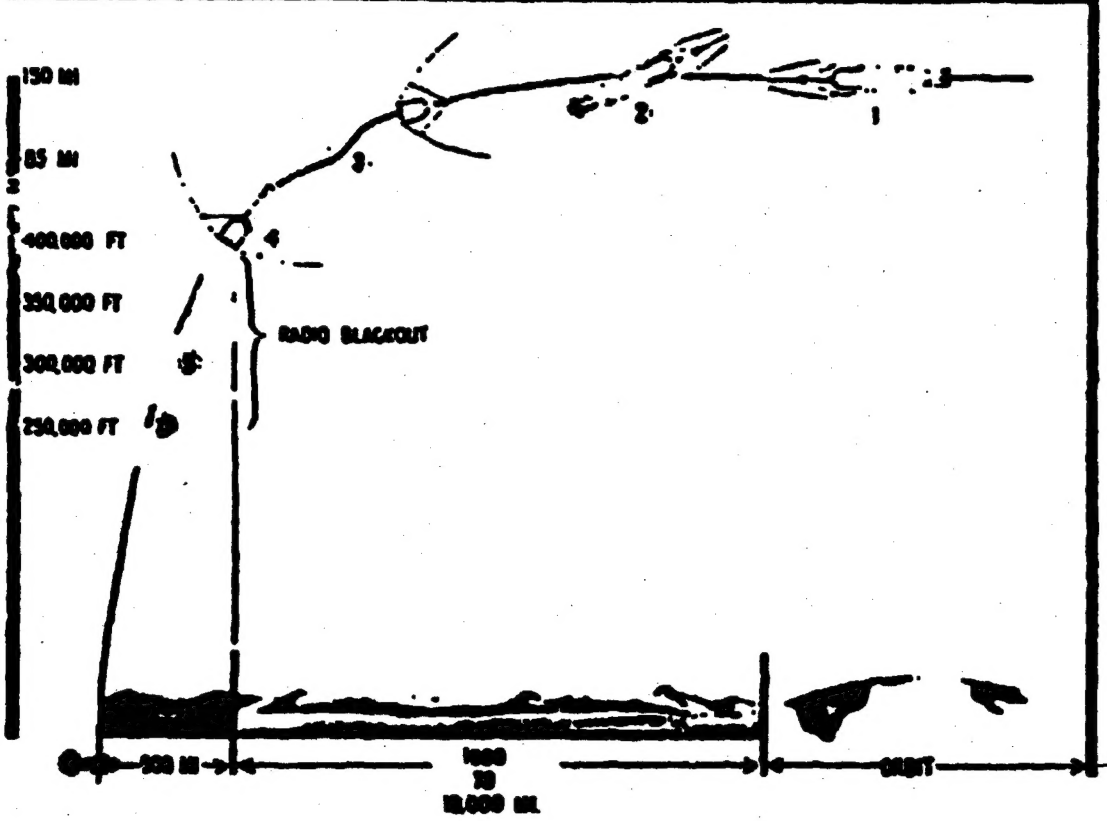
SAMOS E-6 – DRAG BRAKE RE-ENTRY SEQUENCE





1. VEHICLE IN ORBIT
2. REORIENTATION, RETRO FIRING & SEPARATION
3. MODULATE FOR RANGE CORRECTION
4. FULL OPEN
5. PEAK HEATING
6. PEAK DECELERATION
7. LANDING - 40 F.P.S.

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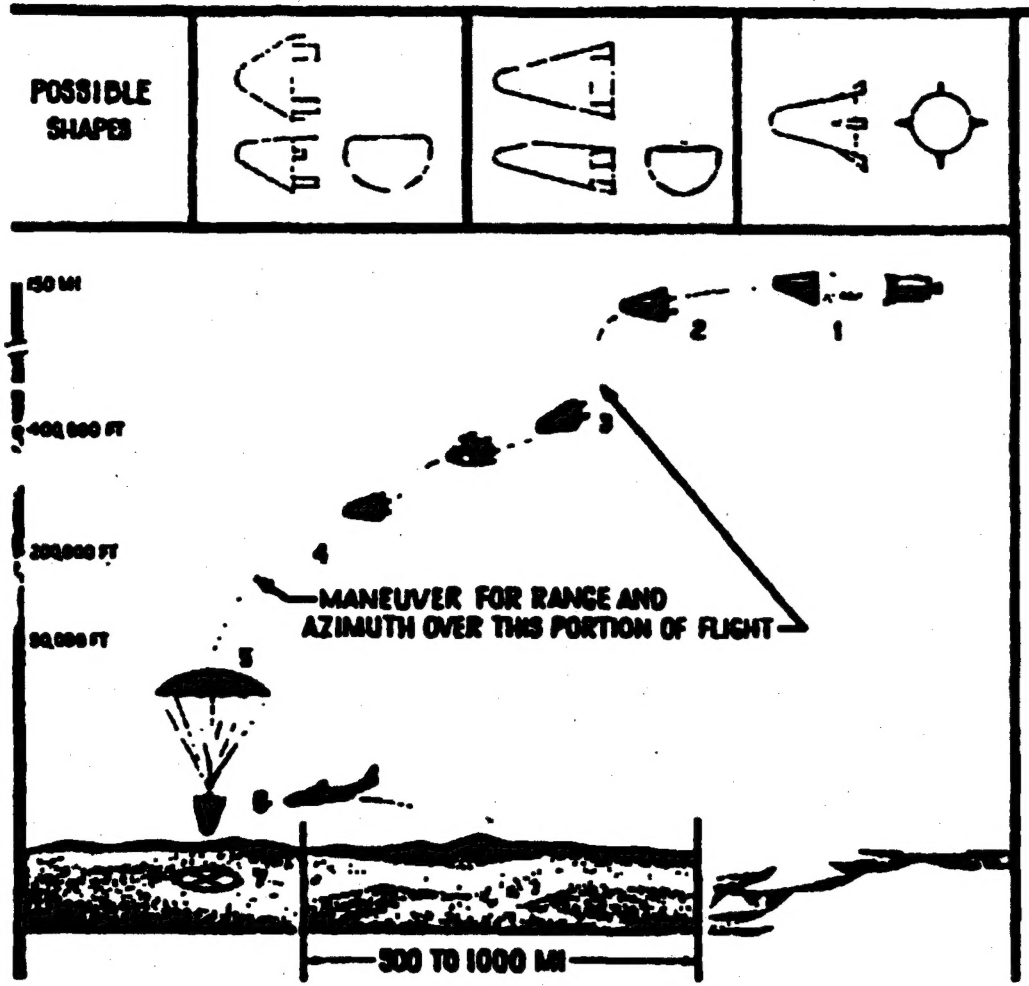
SAMOS E-6 - TYPICAL LIFT RE-ENTRY SEQUENCE



1. VEHICLE IN ORBIT

2 RETRO-ROCKET FIRING AND SEPARATION

3 RE-ENTRY AND RADIO BLACK-OUT-START RANGE AND AZIMUTH CORRECTIONS

4 POST-BLACKOUT-MACH 15 COMMUNICATE FOR TERMINAL GUIDANCE

5 PARACHUTE OPEN-MACH 0.6 TO 1.0

6 AIR PICKUP ATTEMPT POSSIBLE

7. IMPACT - 25 F.P.S.

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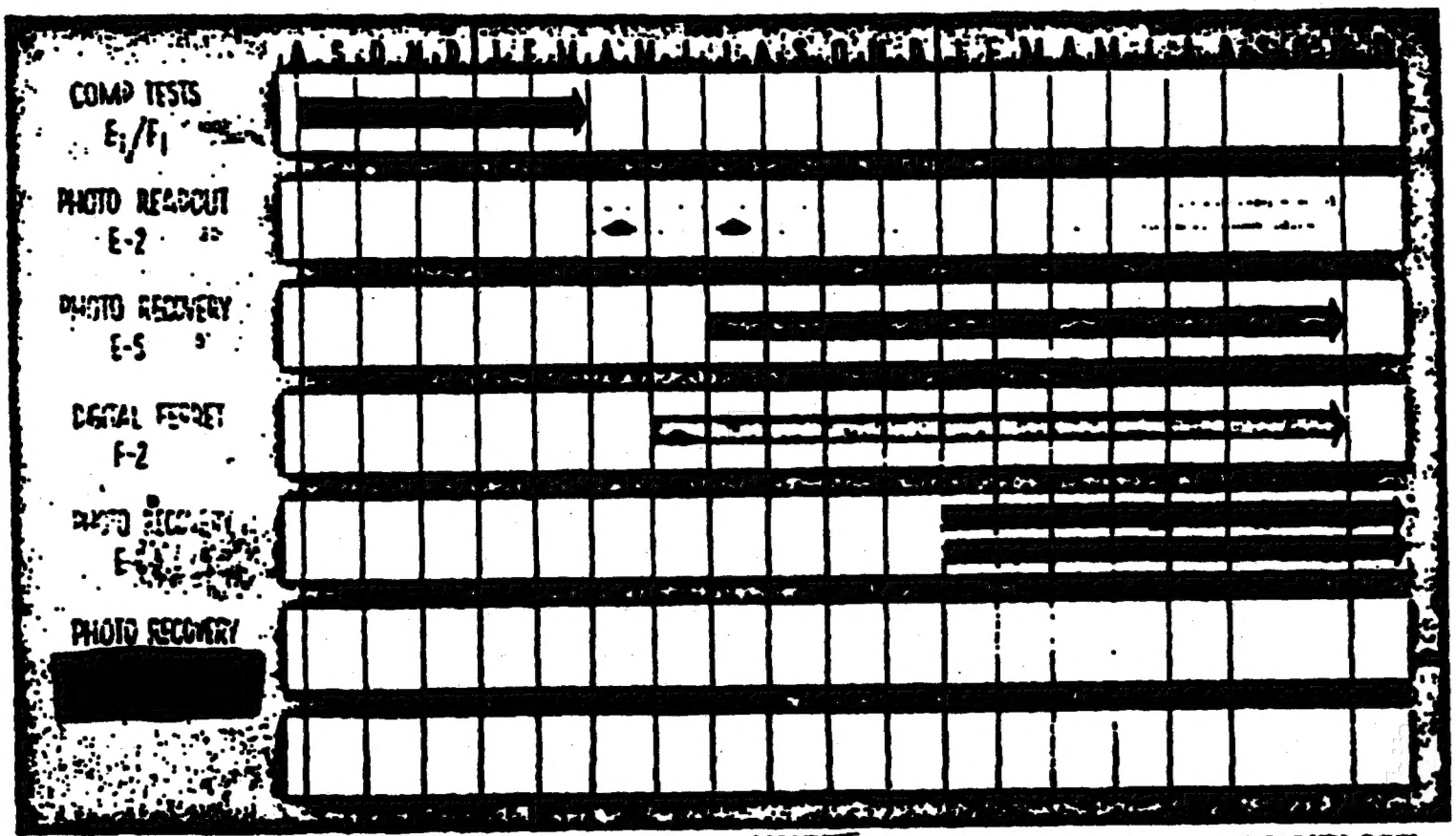
SAMOS LAUNCH SCHEDULE

11 AUG 60 DEV PLAN



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● RADIOISOTOPIC FUELED

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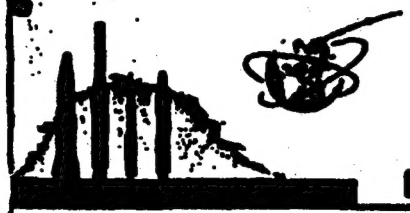
SAMOS FUNDING STATUS

[redacted]

	FY 1961 FUNDING REQUIREMENTS
REALIGNMENT OF PRESENT PROGRAM.	[redacted]
TECHNICAL DIRECTION AND SYSTEM INTEGRATION FOR PRESENT PROGRAM.	
TOTAL PRESENT PROGRAM FOR FY 1961.	
NEW RECOVERY PROGRAM.	
ADDITIONAL BACK-UP TECHNICAL EFFORT.	
ADDITIONAL BOOSTERS & AGENAS FOR FLEXIBILITY.	
AGENA GROUND SUPPORT EQUIPMENT FOR NEW STANDS.	
TOTAL ADDITIONAL PROGRAM	
TOTAL REVISED FY 61 SAMOS PROGRAM	

CONFIDENTIAL



SUMMARY

ELEMENTS OF SAMOS RESEARCH AND DEVELOPMENT PROGRAM

- RECOVERY
  - E-6 PHOTO 5' RESOLUTION ——— 7
  - E-6 PHOTO 25' RESOLUTION ——— 7
  - DIAGNOSTIC RECOVERY ——— 4
- READOUT
  - COMPONENT TESTS PHOTO-ELINT E-1/F-1 - 3
  - E-2 PHOTO 20' RESOLUTION ——— 2
  - F-2 ELINT DIGITAL - ——— 1

  24 PLUS 5 UNASSIGNED ATLAS/AGENA(THRU 1962)
- SPECIAL COMPONENT TESTS
- LAUNCHINGS FROM PT. ARGUELLO
- TRACKING STATIONS
  - VANDENBERG AND NEW BOSTON, INCL. READOUT
  - HAWAII AND ALASKA VHF ONLY
- CONTROL - SATELLITE TEST CENTER - SUNNYVALE
- DATA PROCESSING
  - DEVELOPMENT LABORATORY - DENVER
  - INTERIM PROCESSING OF R&D TAKE - SUNNYVALE
- RECOVERY CENTER - HAWAII

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CHARACTERISTICS
PHOTO PAYLOAD SYSTEMS

SYSTEM	DATA RETRIEVAL METHOD	RESOLUTION	SWATH WIDTH	OPERATING LIFE	MAX DAILY COVERAGE MILLION SQ N MI	TOTAL COVERAGE MILLION SQ N MI
E-1	READOUT[C]	100′	87 N MI	10 DAYS	.57 (1 STA)	5.7
E-2	READOUT	20′	14.5 N MI	4 MOS	.033 (2 STA)	4.0
E-5	RECOVERY	5′	53 N MI	15-30 DA	0.6	4.9[C]
E-6	RECOVERY	8′	200 N MI	5 DA	3.0	14.0
[redacted]						

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